Specification Amendments

On column 1 of the printed patent, amend the paragraph beginning on line 12 under the heading "CROSS-REFERENCE TO COPENDING APPLICATION" as follows:

[Copending]U.S. patent application Ser. No. 07/926,033 filed Aug. 5, 1992, now U.S. Patent No. 5,299,081 issued on March 29, 1994, is directed to a head suspension assembly particularly useful with nanosliders, which are about 50% of the size of the standard full size air bearing sliders. The present application, which a continuation application of reissue application no. 08/521,786 filed August 31, 1995, which is a reissue of application no. 08/042,906 filed April 5, 1993, which issued as U. S. Patent No. 5,282,103 on January 25, 1994, which is a continuation-in-part of [copending] application Ser. No. 07/958,516, now abandoned, discloses a modified and improved head suspension assembly especially useful with femtosliders, which are about 25% of the size of the standard full size sliders. The present application is related to copending reissue application nos. 08/662,531 and 08/662,885, both filed June 13, 1996. The subject matter of [the aforementioned copending application] U.S. Patent No. 5,299,081 is incorporated herein by reference.

On column 1 of the printed patent, amend the paragraph beginning on line 49 as follows:

During operation of the disk drive, the rotating magnetic disk provides an aerodynamic lift force to the slider, while an opposing gram load force is applied to the slider through the flexure. The resultant of the two opposing forces determines the flying height of the slider and its transducer relative to the disk surface. In its operating flying mode, the slider gimbals about a [load dimple] protrusion, commonly known as a load dimple, formed in the flexure.

On column 2 of the printed patent, amend the paragraph beginning on line 40 as follows:

According to this invention, a magnetic head suspension assembly is formed from an integral planar piece comprising a load beam section and flexure section. The load beam is configured preferably as a truncated conical section having flanges along its sides and an extending tongue at its narrow end. The side flanges are formed with U-shaped channels and provide rigidity and stiffness to the load beam section. The load beam tongue extends [into the flexure section and is formed with a hemispherical load dimple which faces down to the non-air bearing surface of a head slider. A U-shaped cutout portion that is formed in the flexure section adjacent to the load beam tongue delineates the shape of the tongue. In one embodiment of the invention, the flexure section includes two narrow etched legs that extend from the load beam and are disposed adjacent to the cutout portion. The narrow legs are connected by a lateral ear at the end of the flexure] <u>from the narrow end of the load beam section into a shaped opening of the flexure section. The load beam tongue is formed with a load supporting protrusion or dimple that extends downward to contact a non-air bearing surface of a head slider. The shaped opening defines two flexure beams that extend in a longitudinal direction of the load beam. The flexure beams are connected by a transverse section at the end of the flexure section opposite the narrow end of the load beam section</u>. In this implementation, the head slider is bonded to the bottom surface of the [lateral ear] <u>transverse section</u>. In an alternative embodiment, the flexure section includes outriggers configured as a split tongue to which the slider is bonded.

On column 4 of the printed patent, amend the paragraph beginning on line 3 as follows:

The load beam section 10 is preferably made in a truncated conical or triangular shape. The load beam section has a short tapered tongue 14 extending from [its relatively narrow end into the flexure section 12. The tongue 14 is delineated by a U-shaped cutout 16 in the flexure section] the relatively narrow end of the load beam section into a shaped opening 16 of flexure section 12. The tongue 14 delineates the U-shape of the opening 16. The load beam tongue 14 provides low deflections in the direction orthogonal to the plane of the load beam section and flexure section by virtue of its short length and low gram load force.

On column 4 of the printed patent, amend the paragraph beginning on line 21 as follows:

The flexure section 12 includes [narrow legs 32 that are located adjacent to the sides of the U-shaped cutout 16. The flexure legs 32] flexure beams 32 defined by shaped opening 16. The flexure beams 32 are chemically etched to a thickness of about 0.0010 inch for increased flexibility. The [narrow legs 32 are] flexure beams 32 are narrow, thin and relatively weak to allow the desired gimbaling action about the load dimple 18 and also to allow the suspension to have low roll and pitch stiffness. A lateral connecting part or [ear] transverse section 38 is formed with the integral flat load beam and flexure to connect ends of the [narrow legs] flexure beams 32.

On column 4 of the printed patent, amend the paragraph beginning on line 31 as follows:

In this implementation of the invention, a slider 22 is bonded to the lateral connecting part 38. A hemispherical load dimple 18 is formed on the load beam tongue 14 and is in contact with the top non-air bearing surface of an air bearing slider 22 that is bonded to the lateral part or [ear] transverse section 38. The load dimple 18 is formed so that the hemisphere of the dimple faces down to the slider. The dimple 18 may be offset, 0-0.006 inch for example, from the centerline of the slider in order to control flying height characteristics.

On column 4 of the printed patent, amend the paragraph beginning on line 41 as follows:

U-shaped flanges 24 extend along the sides of the load beam section and are truncated before reaching the flexure section 12. The flanges 24 contribute to the stiffness of the load beam section and localize[s] the bending action to the spring section 56, thereby minimizing the pitch attitude changes due to arm/disk vertical tolerances. Head circuitry wiring 92 without the conventional tubing is located within the channels of the flanges 24. The absence of tubing allows the U-shaped channels of the flanges 24 to be relatively shallow thereby contributing to the reduction of the Z-height of the head suspension assembly. Adhesive material 90 is used to maintain the wiring 92 fixed in place. Adhesive fillets 91 are provided adjacent to the [ear] transverse section 38 and the slider 22. The fillets 91 are exposed and thus can be cured easily by application of ultraviolet radiation.

On column 5 of the printed patent, amend the paragraph beginning on line 12 as follows:

The leaf spring 56 between the load beam section 10 and the rear mount section 42 is formed with a trapezoidal-like [cutout] opening 60 to provide flexibility. The flexible section 56 is formed to provide a desired load force that counteracts the aerodynamic lift force generated by the rotating disk during operation of the disk drive. The load force arises from bending the suspension from the phantom position, shown in FIG. 2, to the raised position as indicated by the arrow.

On column 5 of the printed patent, amend the paragraph beginning on line 39 as follows:

In an actual implementation of this invention, the overall height of the slider is about 0.0110 inch, its length about 0.0400 inch, and its width about 0.020 inch. The height of the step 28 is about 0.0015 inch above the recessed portion 30 which is 0.0336 inch long. The surface area of the top of the step 28 is preferably minimized in size to reduce the effects of bending or warping at the surface of the slider step which may occur due to the difference in the thermal coefficients of expansion of the ceramic slider 22 and the stainless steel [ear] transverse section 38. Such bending would affect the flying characteristics of the head adversely.

On column 5 of the printed patent, amend the paragraph beginning on line 39 as follows:

In an alternative embodiment of the head suspension, illustrated in part in FIGS. 6A-7, the flexure section 62 is formed with a tongue 64 and a [cutout] shaped opening 66. A down-facing load dimple 76 is provided on the tongue 64. [Narrow etched legs] Narrow, thinly etched flexure beams 68 that extend from the load beam 10 are connected by a transverse part 70. The [legs] flexure beams 68 are

chemically etched to be thinner than the integral flat piece used to form the load beam and flexure sections. Outriggers 72 forming a split tongue are provided at the sides of the flexure 62 and are separated from the thin [legs] flexure beams 68 by [cutouts] spaces 74. The outriggers 72 overhang the sides of the slider 22 and the slider is fastened to the outriggers by [an] adhesive fillets [90] 61. In this implementation, the top non-air bearing surface 20 of the slider 22 is bonded to the outriggers 72 by adhesive fillets [which provide bond strength at the cutout 16,] 61 which provide bond strength as shown in FIG. 6C. The slider 22 is mounted to the outriggers 72 so that the center of the slider is aligned with the load dimple 76, and the slider projects beyond the end of the transverse part 70. There is no offset of the load dimple 76 relative to the centerline of the slider. With this implementation, a lower vertical height (Z-height) is realized. Also the slider bonding areas of the outriggers 72 are larger than the bonding area of the lateral connecting part 38 of flexure 12 of FIG. 1. In this implementation, there is little room to move the slider toward the leading edge relative to the load dimple, which may be necessary to obtain optimal flying attitude. Also, additional forming is required in order to bend the two outrigger legs 72 down to the bend 20, which increases the tolerances during production.

On column 5 of the printed patent, amend the paragraph beginning on line 39 as follows:

In an actual implementation of this invention, the overall height of the slider is about 0.0110 inch, its length about 0.0400 inch, and its width about 0.020 inch. The height of the step 28 is about 0.0015 inch above the recessed portion 30 which is 0.0336 inch long. The surface area of the top of the step 28 is preferably minimized in size to reduce the effects of bending or warping at the surface of the slider step which may occur due to the difference in the thermal coefficients of expansion of the

ceramic slider 22 and the stainless steel [ear] transverse section 38. Such bending would affect the flying characteristics of the head adversely.

Drawing Amendments

Figure 6C contains an error with respect the designation of the adhesive fillets that fasten the slider to outriggers 72. This element is designated by numeral 16 in the '103 patent, but should be listed as numeral 61 (numeral 16 is used elsewhere in the '103 patent to designate the shaped flexure opening of the embodiments shown in Figures 1A, 3, and 5A). Accordingly, reference numeral 16 in Figure 6C has been changed to reference numeral 61 in the amended drawing sheet attached herewith.